

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

**(19) World Intellectual Property Organization  
International Bureau**



A standard linear barcode is located at the bottom of the page, spanning most of the width.

(43) International Publication Date  
23 December 2004 (23.12.2004)

PCT

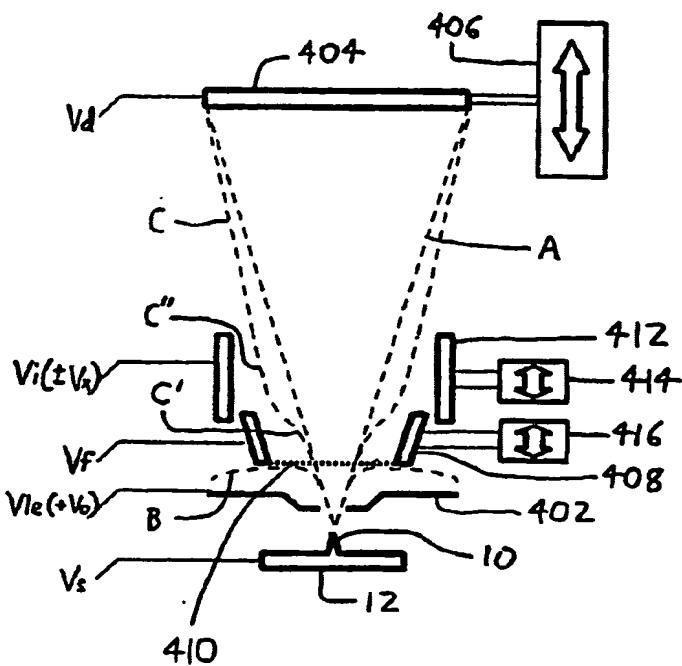
(10) International Publication Number  
**WO 2004/111604 A2**

(51) International Patent Classification <sup>7</sup> :	G01N	
(21) International Application Number:	PCT/US2004/016590	
(22) International Filing Date:	26 May 2004 (26.05.2004)	
(25) Filing Language:	English	
(26) Publication Language:	English	
(30) Priority Data:		
60/476,348	6 June 2003 (06.06.2003)	US
(71) Applicant (for all designated States except US):	IMAGO SCIENTIFIC INSTRUMENTS (US/US); 6300 Enterprise Lane, Madison, WI 53719 (US).	
(72) Inventor; and		
(75) Inventor/Applicant (for US only):	GRIBB, Tye, Travis [US/US]; 6300 Enterprise Lane, Madison, WI 53719 (US).	
(74) Agents:	FIESCHKO, Craig, A. et al.; DeWitt Ross & Stevens, S.C., 8000 Excelsior Drive, Suite 401, Madison, WI 53717-1914 (US).	
(81) Designated States (unless otherwise indicated, for every kind of national protection available):	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.	
(84) Designated States (unless otherwise indicated, for every kind of regional protection available):		
ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).		
Declaration under Rule 4.17:		
— of inventorship (Rule 4.17(iv)) for US only		
Published:		
— without international search report and to be republished upon receipt of that report		

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[Continued on next page]

**(54) Title: HIGH RESOLUTION ATOM PROBE**



(57) **Abstract:** An atom probe includes one or more intermediate electrodes between its local electrode and its detector, wherein the intermediate electrode(s) are charged to potentials such that they filter spurious ions and prevent them from reaching the detector, and/or adapt (focus) the flight cone of the ions to have a narrower or wider angle, thereby adjusting the magnification and field of view of the image provided by the atom probe. A preferred arrangement is to provide both filtering electrodes and focusing electrodes which are movable with respect to each other, and which may be telescopically interfit, so as to provide a range of filtering and focusing effects.

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23 December 2004 (23.12.2004)

PCT

(10) International Publication Number  
**WO 2004/111604 A3**

(51) International Patent Classification<sup>7</sup>: **H01J 37/285**,  
G01N 25/00

(21) International Application Number:  
**PCT/US2004/016590**

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— of inventorship (Rule 4.17(iv)) for US only

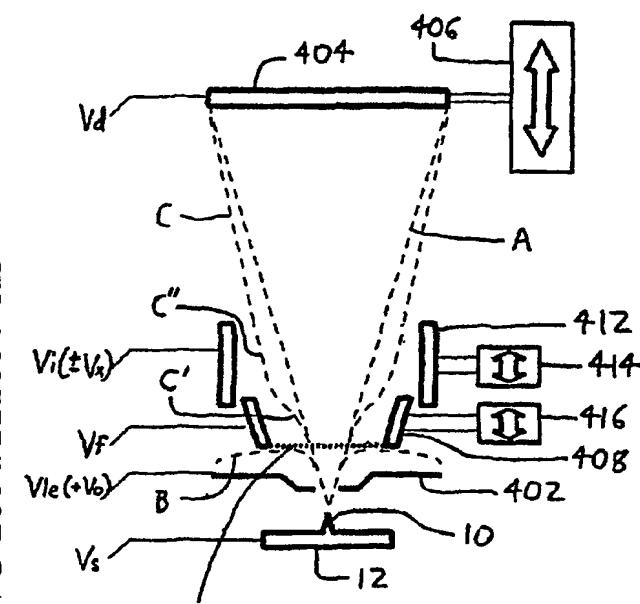
Published:

— with international search report

(88) Date of publication of the international search report:  
18 August 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HIGH RESOLUTION ATOM PROBE



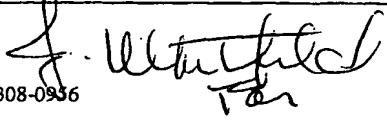
(57) Abstract: A three dimensional atom probe comprising a sharp specimen (10) coupled to a mounting means (12) where emission of charged particles is caused by application of a potential to the specimen tip (10) such that charged particles are influenced by filtering electrodes (206, 204) before impingement on a detection screen (202).

WO 2004/111604 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/16590

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(7) : H01J 37/285; G01N 25/00 US CL : 250/306, 307, 309, 311; 324/451 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 250/306, 307, 309, 311; 324/451		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,206,408 A (DRECHSLER) 03 June 1980 (03.06.1980), Fig. 3.	1-30
A	US 6,580,069 B1 (CEREZO) 17 June 2003 (17.06.2003), Fig. 1 and columns 3-4.	1-30
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		See patent family annex.
* Special categories of cited documents: *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier application or patent published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 20 December 2004 (20.12.2004)		Date of mailing of the international search report 28 MAR 2005
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer John R. Lee  Telephone No. 703-308-0936

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US04/16590

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**  

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.